

# PATENT ABSTRACTS OF JAPAN

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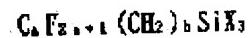
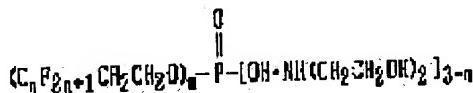
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## (54) POWDERY COSMETIC

### (57)Abstract:

**PURPOSE:** To obtain a powdery cosmetic, liquefiable by smearing in use and capable of providing good feeling of use and finish such as impartment of refreshing feeling and moistness during the use, further emollient properties and moisture and excellence in affinity for the skin.

**CONSTITUTION:** This powdery cosmetic comprises (A) 0.1-7wt.% hydrophobized silicic acid anhydride in which the surface of the fine particulate silicic acid anhydride is coated with an organosilane-based compound, a silicone compound, etc., and the surface area is  $\geq 80\text{m}^2/\text{g}$ , (B) 1-50wt.% powder for the cosmetic subjected to coating treatment with a fluorine compound, (C) 30-40wt.% oily ingredient composed of various solid, semisolid or liquid vegetable oils, animal oils, mineral oils and synthetic oils and (D) 30-90wt.% aqueous ingredient and is liquefiable by smearing. A perfluoroalkyl phosphate.diethanolamine salt of formula I [(n) is 6-18; (m) is 1 or 2] and a perfluoroalkylsilane of formula II [(a) is 1-12; (b) is 1-5; X is alkoxy, halogen or alkyl] are preferred as the fluorine compound used for the coating treatment of the ingredient (B).



II

## LEGAL STATUS

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Industrial Application] though this invention is the charge of makeup of a powder form, if this is rubbed at the time of use -- liquefying -- a liquid -- a property [ like ] arises and it is related with the charge of powder makeup which can acquire a good feeling of use and good workmanship

[0002]

[Description of the Prior Art] Conventionally, as a charge of makeup of a powder form, although a face powder, \*\*\*\* powder, etc. were known, there was a problem of the skin with chalky workmanship to which powder disperses drying while in use. Moreover, although the method of using the charge of powder makeup for the purpose of grant of the osmosis promotion to the skin of a medicine, moisture, an oil content, moistness, and emollient nature etc., mixing with water, an oil, the charge of liquefied makeup, etc. was also performed, there was a problem in respect of usability etc.

[0003] therefore -- while it is a powder form -- a liquid -- it has a property [ like ] and a charge of makeup excellent in usability etc. was desired

[0004]

[Means for Solving the Problem] In this actual condition, when this invention persons powder-ized the oily component and the water component by the specific hydrophobing silicic acid anhydride and the fine particles for the charges of fluorine compound covering processing makeup as a result of inquiring wholeheartedly, and using, though it was the charge of makeup of a powder form, while in use, they found out that coolness and the charge of makeup which gives admiration gently and can give the compatibility to the skin, emollient nature, moisture, etc. were obtained, and completed this invention.

[0005] this invention Namely, the hydrophobing silicic acid anhydride more than following component (a) - (d):(a) surface-area of 80m<sup>2</sup>/g The fine particles for the charges of 0.1 - 7 % of the weight (b) fluorine compound covering processing makeup A 1 - 50 % of the weight (c) oiliness component 30 - 40 % of the weight (d) water component 30 - 90 % of the weight is contained, and the charge of powder makeup characterized by liquefying by inunction is offered.

[0006] The hydrophobing silicic acid anhydride of the (a) component used for this invention The front face of a particle silicic acid anhydride An organosilane system compound, a silicon compound, what is covered with the fluorine compound etc. -- it is -- for example, a trimethyl siloxyl-ized silicic acid anhydride (the Cabot Corp. make --) KYABOJIRU TS-530 and surface-area 325m<sup>2</sup>/g and a dimethyl siloxyl-ized silicic acid anhydride (the Degussa make --) erotic JIRU R-972, surface-area 110\*\*20m<sup>2</sup>/g, and an octyl siloxyl-ized silicic acid anhydride (the Degussa make --) The silicic acid anhydride processed by erotic JIRU R-805, surface-area 150\*\*25m<sup>2</sup>/g, the silicone-oil processing silicic acid anhydride (the Degussa make, erotic JIRU R-202, surface-area 100\*\*20m<sup>2</sup>/g), the after-mentioned fluorine compound (1), or (2) is mentioned. When these hydrophobing silicic acid anhydride requires that a surface area should be more than 80m<sup>2</sup>/g and has few surface areas than this, it becomes impossible for particle size of a hydrophobing silicic acid anhydride to be unable to become large, and to carry out orientation of it to the front face of a water component so much, but to powder-ize a water

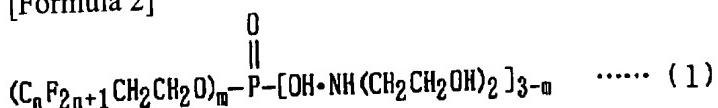
component stably.

[0007] Especially if it is generally used for the charge of makeup as fine particles for the charges of makeup which perform covering processing of the fluorine compound of the (b) component of this invention, it will not be restricted, for example, talc, a mica, a kaolin, a magnesium carbonate, a calcium carbonate, an aluminum silicate, a magnesium silicate, a calcium silicate, titanium oxide, a zinc oxide, red ocher, a yellow iron oxide, a black iron oxide, ultramarine, KONJOU, tar coloring matter, a natural coloring matter, mica titanium, iron-oxide mica titanium, a bismuth oxychloride,

coloring matter, mica titanium, iron-oxide mica titanium, a bismuth oxychloride, [0008] moreover, as a fluorine compound used in order to give hydrofuge and oil repellency to these fine particles for the charges of makeup The perfluoroalkyl phosphoric ester diethanolamine salt expressed with the following general formula (1), The perfluoroalkyl silane expressed with a general formula (2) is desirable. For example, the Asahi guard AG530 (Asahi Glass Co., Ltd. make), LS-160, LS-360, LS-912, LS-1080, LS-1090, LS-1465 (above) The Shin-Etsu Chemical Co., Ltd. make, XC 95-418, XC 95-466, XC 95-467, XC 95-468, XC 95-469, XC 95-470, XC 95-471, XC 95-472 (above, E-11, Silicano make), etc. can be used.

TOSHIBA  
[00009]

[009]  
[Formula 2]



[00101] (n shows the integer of 6-18 among a formula, and m shows 1 or 2)

[0010] (n shows the integer of  $\text{CaF}_2\text{a}+1(\text{CH}_2)_b\text{SiX}_3$ ) ... (2)

$\text{CaF}_{2a+1}(\text{CH}_2)_b\text{SiX}_3 \dots$  (2)  
 a shows the integer of 1-12 among a formula, b shows the integer of 1-5, and X is the same -- or it differs and an alkoxy group, a halogen atom, or an alkyl group is shown However, the case where all X is alkyl groups is removed.

[0011] (b) The fine particles of a component need to carry out covering processing with these fluorine compounds. \*\*\*\* also in the function which carries out the pulverization of the aquosity component, in order to show wetting and to also soak a hydrophobing silicic acid anhydride in these processing fine particles further, when oil repellency is not given but it mixes with an oily component, although there are some to which oily medicine processing of siliconization, high-melting point waxing, etc. and various surface treatment, such as metal soap processing, were performed also except fluorine compound processing fine particles in order to give water repellence -- it will be divided If it is going to carry out the pulverization of the aquosity component by force, the amount of a hydrophobing silicic acid anhydride is needed for a large quantity, and although an aquosity component can carry out the pulverization, the liquefaction at the time of use does not take place smoothly, and is not desirable on organic functions. However, fine particles and the unsettled fine particles which were processed by these are a book.

[0012] In order to process the fine particles for the charges of makeup with a fluorine compound For example, when the perfluoroalkyl phosphoric ester diethanolamine salt of a general formula (1) is used, Add water to the fine particles for the charges of makeup, consider as a slurry regime, and, on the other hand, water is added and stirred in a perfluoroalkyl phosphoric ester diethanolamine salt (1). What is necessary is to destroy an emulsion, to wash this, to filter and just to dry by ordinary temperature or elevated-temperature gentle placement, after \*\*\*\*(ing) gradually that which was changed into 0.1 - 5% of the weight of the emulsion state and mixing. Moreover, what is necessary is to be able to carry out like the approach of the hydrophobing fine particles processed with silicone metallurgy group soap etc., for example, just to perform a room temperature or stoving for a perfluoroalkyl silane (2), stirring the fine particles for the charges of makeup, remaining as it is or after diluting to solvents (for example, a methanol, ethanol, chloroform, dichloromethane, volatile silicone, water, etc.), adding by spraying or

[0013] As an oily component of the (c) component of this invention, solid [ which is usually used for the charge of makeup ], half-solid, the various vegetable oil or a liquid, animal oil, straight mineral oil, and

a synthetic oil can be used. concrete -- for example, hydrocarbons [, such as low; liquid paraffins, such as fats-and-oils; yellow bees wax, such as olive oil, a jojoba oil, a mink oil, and Japan wax, and a candelilla low a micro crystalline wax, and vaseline, ]; -- silicon compounds, such as lanolin derivative; methyopolysiloxanes, such as ester; lanolin fatty-acid isopropyls, such as higher-alcohol; myristic-acid isopropyls [, such as a fatty-acid; cetanol, ], such as stearin acid and oleic acid, and lanolin alcohol, and a methylphenyl polysiloxane, etc. are mentioned These oiliness component can also use together the so-called oily gelling agents, such as a dimethylpolysiloxane polymerization object which can use combining one sort or two sorts or more, and, in addition to this, has an organic denaturation clay mineral, starch fatty acid ester, and the 3-dimensional structure of cross linkage. Furthermore, what encapsulated the oily component by what high cohesiveness polymer, such as what impalpable-powderized high-melting point waxes, such as a micro crystalline wax, and porosity fine particles, such as a magnesium carbonate, an acrylate copolymer, etc. was made to carry out support absorption, and carried out the pulverization of the oily component to it as an oily component, the polymethylmethacrylate, etc. can also be used.

[0014] Especially if it is the aquosity component used for the usual charge of makeup as an aquosity component which is the (d) component of this invention, it will not be limited, for example, polyhydric alcohol, such as a purified water, a glycol, and a glycerol, a water soluble polymer, etc. are mentioned.

[0015] The blending ratio of coal to total composition of (a) - (d) component in this invention is as follows.

(a) The loadings of a component are 2 - 4% preferably 0.1 to 7% of the weight (% only shows hereafter). The pulverization of the aquosity component cannot be carried out, but it becomes impossible to fully acquire the powder gestalt to mean at less than 0.1%. Moreover, although the pulverization of a lot of aquosity components can be carried out if it exceeds 7%, it does not liquefy, even if it rubs ointment at the time of use, and does not have a feel like a liquid.

(b) The loadings of a component are 1 - 50%. At less than 1%, combination of the (c) component cannot be performed, but if it exceeds 50%, the feel like a liquid will no longer be acquired at the time of use.

(c) The loadings of a component are 30 - 40%. If it exceeds 40%, a hydrophobing silicic acid anhydride will get wet, a hydrophobing silicic acid anhydride and an oily component serve as a continuum, it stops having the function which carries out the pulverization, and smooth liquefaction becomes impossible.

(d) Although the loadings of the aquosity component of a component change with the composition ratios and loadings of (a) and the (b) component, they are 30 - 90%. If it does not liquefy when fewer [ than 30% ] and ointment is rubbed, and it exceeds 90%, it stops being able to carry out the pulverization of this, and is not desirable on organic functions.

[0016] It is a book about the component used for the charge of powder makeup of this invention at the usual charge of makeup in addition to the above-mentioned indispensable component, for example, perfume, antiseptics, an ultraviolet ray absorbent, an antioxidant, a cosmetics component, etc.

[0017] The charge of powder makeup of this invention is manufactured by mixing the (a) component to what carried out mixed processing and carried out the pulverization for example, of the (b) component and the (c) component, and subsequently to this mixing and carrying out the pulverization of the (d) component to it.

[0018] If it exists after the (d) component has stuck to the (a) component and the (c) component has stuck to the (b) component, and the force is applied by inunction, the (c) component and the (d) component by which this adsorbed state was destroyed and the pulverization was carried out will ooze, and will liquefy by carrying out the charge of powder makeup of this invention.

[0019] [Example] Next, although an example is given and this invention is explained further, this invention is not limited to these examples.

[0020] The face powder of the composition shown in examples 1-2 and example of comparison 1 table 1 was manufactured.

[0021]

[Table 1]

成 分 (%)	実 施 例		比較例 1
	1	2	
1. アサヒガード AG530処理(5%)チタン <sup>*1</sup>	0.5	0.5	0.5
2. アサヒガード AG530処理(5%)タルク <sup>*1</sup>	12.0	12.0	12.0
3. アサヒガード AG530処理(5%)マイカ <sup>*1</sup>	3.5	3.5	3.5
4. アサヒガード AG530処理(5%)顔料 <sup>*1</sup>	1.0	1.0	1.0
5. トリメチルシロキシル化無水ケイ酸 (表面積325m <sup>2</sup> /g)	3.0	3.0	3.0
6. 流動パラフィン	3.0	3.0	3.0
7. マイクロクリスクリンワックス <sup>*2</sup>	15.0	15.0	40.0
8. ジメチルポリシロキサン(20cs) 担持アクリレートコポリマー <sup>*3</sup>	20.0	—	7.0
9. スクワラン内包ポリメタクリル酸メチル <sup>*4</sup>	—	25.0	—
10. 精製水	42.0	37.0	30.0

\*1: アサヒガード AG530を用いて前述の如くして製造した。

\*2: マイクロクリスクリンワックスを微粉末化した。

\*3: アクリレートコポリマー (ポリトラップQ5-6603;ダウ・コーニング社製) : ジメチル  
ポリシロキサン(20cs) = 1部 : 3部

\*4: スクワラン60%内包ポリメタクリル酸メチル (マツモトマイクロスフェアー; 松本油  
脂製薬社製)

#### [0022] (Process)

A: Carry out preferential grinding of No.1-4.

B: After carrying out the heating dissolution of No.6, mix with A, add No.7-9 and carry out mixed stirring.

C: Carry out mixed stirring of B and No.5.

D: Mix No.10 to C, fill up a container and consider as face powder.

[0023] The face powder of three or less-example composition was manufactured.

#### [Table 2]

##### (Component) (%)

1. Asahi Guard AG530 Processing (5%) Talc \*1 18.52. Asahi guard AG530 processing (5%) Pigment  
\*1 0.53. LS160 processing (5%) Silicic acid anhydride (surface-area 110\*\*20m<sup>2</sup>/g) \*2 3.04. -- trimethyl  
siloxyl-ized silicic acid anhydride (surface-area 325m<sup>2</sup>/g) 3.05. Micro crystalline wax \*3 20.06. Liquid  
paraffin 10.07. Starch fatty acid ester 5.08. glycerol 2.09. purified water 38.0\*1: Carry out like the  
above-mentioned using the Asahi guard AG530. It manufactured.

\*2: It manufactured by carrying out like the above-mentioned using LS160.

\*3: The micro crystalline wax was impalpable-powder-ized.

#### [0024] (Process)

A: Carry out preferential grinding of No.1-2.

B: After carrying out the heating dissolution of No.6-7, mix with A, add No.5 and carry out mixed stirring.

C: Carry out mixed stirring of B and No.3-4.

D: Mix No.8-9 to C, fill up a container, and consider as face powder.

[0025] while the charge of powder makeup of the examples 1-3 which were obtained by carrying out  
like the above is powder -- inunction -- smooth -- liquefying -- under use -- coolness -- while sensing  
admiration gently, it excels in the compatibility to the skin, and emollient nature and moisture can be  
given -- it excelled On the other hand, in the example 1 of comparison, although the pulverization was  
possible, it was what cannot liquefy by inunction and does not have an effect like this invention at all.

#### [0026]

[Effect of the Invention] It can liquefy by inunction at the time of use, and the charge of powder makeup of this invention can acquire a good feeling of use and good workmanship -- coolness and admiration is given gently, moreover, it excels in the compatibility to the skin, and emollient nature, moisture, etc. can be given -- while in use, though it is powder.

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[Translation done.]